

ERP Implementation and Foreign Ownership in High-Tech Industry to Achieve Sustainable Development Goals

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Abstract. This research aims to identify how ERP implementation can benefit the high-tech industry and achieve sustainable development goals. This research also examines how foreign ownership can affect the performance of the high-technology industry. High technology has been widely used in any industry, especially manufacturing. The research method used in this study was Systematic Literature Review (SLR). The steps taken from this research method start with research planning, implementation, and reporting. This study's evident in how much previous research has discussed ERP implementation in high-tech industries and how to achieve sustainable development goals. The ERP implementation in the high-tech industry will benefit the company as it will make it easier for its departments to carry out its business processes, and the knowledge and expertise of foreign investors will influence the high-tech industry. This research is urgently needed to achieve sustainable development goals, as implementing ERP in high-tech industries can increase operational efficiency and corporate productivity. ERP implementation research can be used to explore how ERP can be used to support sustainable product development. Foreign ownership has an essential impact on the high-tech industry to understand the implications of sustainable development goals. For further research, you can conduct a more in-depth analysis of how important it is for the high-technology industry to achieve sustainable development goals.

1 Introduction

An industry with high-tech has spread in several countries—current high-tech industries such as computers, electronics, robots, etc. The existence of high-technology industries in developing countries has seen increased output. The high-tech industry is still not extensively used because the government and people lack technology knowledge. Technology is fundamental in companies increasing corporate innovation [1]. High-tech is also explained as a production process with workers with expertise in Science, Technology, Engineering, and Mathematics (STEM) and produces product output with high-tech [2]. The manufacturing sector includes using high-tech in its companies and entering the high-tech industry.

An example is in the automotive industry. The use of high-tech is needed to produce quality products. Companies in the high-tech industry have an essential role in managing capacity to achieve long-term success [3]. Unfortunately, in Indonesia, the output of the manufacturing industry is still a lot of low-technology industries. As Indonesia's trade side, low-tech industries still dominate exports [1].

The Sustainable Development Goals (SDGs) are a follow-up document from the Millennium Development Goals (MDGs). Even though it is a continuation of the MDGs, there are fundamental differences in the SDGs. The MDGs are responsible for achieving development

targets for less developed and developing countries without having a balanced role in developed countries. The MDGs also have an inefficient process because, from the perspective of preparation to implementation, it is carried out exclusively and bureaucratically without involving the role of non-governmental stakeholders [4]. While the SDGs are more aimed at addressing broader development issues. The goal of the SDGs is to maintain the improvement of the community's economy and implement governance that can maintain an improved quality of life for the next generation. SDGs provide a balanced role for all countries to contribute to development. Ultimately, each country has the same responsibility and role as others to achieve SDGs [4].

ERP (Enterprise Resourcing Planning) is a business module that can connect business units within an organization, such as finance, IT, production, HR, and others, into an integrated system throughout the company. Implementation of ERP in companies is a company's strategy to improve the quality of information systems from companies, and this happens because ERP supports the smooth running of the company's business processes. In Indonesia, the industry that uses ERP continuously is the manufacturing industry because the manufacturing industry is relatively complex in terms of factories. ERP can make the company more efficient [5].

Foreign ownership is the shares of companies owned by foreign investors. In Indonesia, many companies sell shares to foreign investors. The reason for doing this is

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competition and promoting better work in Indonesia [6]. Companies that have high foreign ownership are expected to be able to improve the company's performance. Companies with a high proportion of foreign ownership are expected to improve their business performance. Increased foreign ownership resulted in better financial performance in several countries, such as Japan, China, and Turkey [7]. Managing foreign ownership can efficiently control the company's operational activities to increase profits [8]. Many companies in Indonesia are listed on the IDX that have foreign ownership of the company's shareholders. Foreign ownership of companies is considered a concern for improving good corporate governance [9]. An example of an Indonesian company with foreign ownership is PT. Bank KB Bukopin Tbk. Bank Bukopin has a shareholding which is the largest shareholder, namely KB Kookmin Bank, a bank from South Korea.

2 Literature Review

Companies use ERP to integrate functions within the company. ERP can integrate company departments, such as finance, marketing, HR, IT, Production, etc. ERP implementation aims to integrate company-owned applications into a data storage center that departments of the company can access. The goal is to make the company more efficient. A researcher said that ERP is done with single data entry, which means that part of the company's function enters data, which can be used by other company functions [10]. A study examines that around 54.2% of companies implement e-business applications. From these results, 31 out of 33 companies stated that the department that had the most contact with e-business applications was the finance department. The manufacturing industry is also listed as having the most connection with e-business applications. These companies stated that with e-business, the company's productivity had increased [10]. According to a researcher, an ERP system is an advanced functional system that integrates processes from all areas of business management. ERP becomes a crucial tool for planning business activities and information and helps control company resources in different places [5]. Other studies that discuss the implementation of the ERP sub-model in heavy equipment spare part purchase transactions carry out a process using five stages in ongoing business processes and generate reports that companies need [11].

A study discusses the development of SDGs in Indonesia. The SDGs are a global initiative that aims to provide a better social, economic, and environmental life. SDGs at the regional and national levels need to strengthen the SDGs values that are inclusive following the SDGs at the global level. Indonesia does not want to be late in implementing the SDGs, as before, it was late in implementing the MDGs due to the recovery from the economic crisis. Indonesia needs to prioritize SDGs on the national development agenda and implement inclusive SDGs at the central and regional levels. The government needs to make SDGs a national development priority [4]. In addition, a study also

conducted research to measure the SDGs and the impact of the fundamental pillars of SDGs on sustainable development. This research results that in developed countries, the fundamental pillars of the SDGs are significant, and the social and environmental pillars that underlie SDGs are the highest for increasing sustainable development. As for developing countries, the results show that these countries can continue to focus on SDGs' social and economic pillars. In the SDGs' environmental pillar, sustainable development benefits are relatively minor. Therefore, this cannot be allowed because the three pillars of the SDGs are interrelated [12]. Sustainable development goals have 17 objectives. With sustainable development goals, it becomes crucial for a country to develop in all aspects and become a developed country for a previously developing country, such as Indonesia [13].

The research discusses learning about technology in the Indonesian manufacturing industry, which is still not optimal. Companies in Indonesia are still unable to make good use of cooperation with Multinational Corporations regarding the application of high-tech. The process fiercely affects technological capabilities. Several studies discuss the factors that determine technology learning, namely networking factors, learning, R&D, manufacturing capabilities, market performance, creativity, product development outcomes, and modeling [1]. Another study researched the transformation of low-tech to high-tech manufacturing in China. Initially, China was still underdeveloped in industrial productivity and had few foreign investors, and manufacturing exports were still lacking. After sufficient development, China made several preferential foreign investment policies, eventually attracting many foreign investors and bringing sophisticated technology and good management. Finally, exports obtained from China increased by around 20.2% from 1990 – 2008 [14].

There is research that discusses the ownership of companies to benefit from internalization. Ownership is one of the strategies undertaken by many companies. Own ownership has many meanings, such as internal or external ownership [15]. A researcher who discusses foreign ownership states that foreign ownership has a significant positive effect on social responsibility disclosure. However, other researchers revealed that foreign ownership does not significantly affect the level of disclosure of social responsibility. The two researchers have different results. Companies with a high percentage of foreign ownership are expected to improve performance [8]. Other research shows that foreign ownership in a company can improve the monitoring process, which allows management information to be provided to the company's stakeholders. In Indonesia, it shows that foreign ownership in Indonesia is concerned about social issues, economic issues, environmental issues, and critical issues that companies must disclose in annual reports [16]. When the foreign ownership of a company in Indonesia comes from European countries and the United States, these countries are very concerned about social issues, such as violations of human rights, labor, and education, as well as environmental issues, such as water pollution and the greenhouse effect. Foreign-owned companies that care about social and

environmental issues can efficiently allocate funds to social and environmental activities [17].

3 Method

This study was compiled using the Systematic Literature Review (SLR) method. The SLR method was used in this study to collect and evaluate previous studies by researchers relevant to this research topic. Through this research, a comprehensive understanding of the research topic can be achieved to increase confidence in the results. This method is also used to identify the weaknesses and strengths of previous studies. This method is structured in review papers, journals, and papers on ERP Implementation in High-Tech Industries to Achieve Sustainable Development Goals. There are several stages of the SLR method that can be carried out to make it easier to review journals, articles, and papers, which are as follows:

The first stage is planning which is used to facilitate research writing. The first stage also determines the purpose of the research. The purpose of this study is that implementing ERP in the high-technology industry can make it easier for companies to achieve sustainable development goals. Even more so in high-technology companies that still don't use ERP in their business processes. Based on this research, it can be considered for companies to implement ERP in their business processes to drive developments in the company. Considerations such as the increased efficiency after the existence of ERP in the company and the increase in information and data control within the company that enables decision-making can be seen.

The second stage is identifying studies by providing keywords to make finding journals, articles, and papers related to the title easier. The keywords used are "ERP implementation," "high-tech industry," "sustainable development goals," and "foreign ownership." Keyword searches were carried out on Scopus and Google Scholar. The search for keywords that was carried out resulted in studies that discussed the keywords entered. From these results will be found research related to the research title. When identifying the results of the search that have been found, specify the appropriate year for the research. After finding results that follow the title, data extraction will be done by reading articles, papers, and journals as a whole or only through abstracts. If the data extraction has been done, that will require analysis of the research results from the results found. Analysis data using Publish or Perish and Vosviewer to find out how much previous research has been done research related to the given keywords. After this analysis, different results will be obtained regarding the high-tech industry before implementing ERP, foreign ownership, and how the high-tech industry can achieve sustainable development goals.

The final stage is reporting, which contains research gaps and conclusions. Research gaps are discovered to discover the gaps in the research results. In addition to knowing the existing gaps, the integration of studies that have been done previously with high relevance is also carried out. Integration is done by combining all the

results from existing articles, journals, and papers to explain the results of this research. After all the analysis, the last step is to summarize all articles, journals, and papers to make conclusions.

4 Results and Discussion

The results of this study were obtained from reviews of articles, essays, and journals found based on multiple research keyword searches—the results to be discussed focus on implementing ERP in high-technology industries. In previous studies, many discussed the implementation of ERP in various industries, such as the construction industry, manufacturing, and others.

4.1 Achieving Sustainable Development Goals by Implementing ERP in High-Tech Industry

The use of ERP in large companies has been widely used. Companies that use ERP a lot are manufacturing companies. Manufacturing becomes easier and works well for operational activities with ERP. ERP links production data with raw material requirements in manufacturing, facilitating the process and making production material requirements faster. The existence of an ERP system can provide many benefits for the company. ERP can make company activities more efficient, and data from the company is also better maintained. ERP can make more accurate business forecasts, and companies can minimize operational expenses with ERP. In companies that have complex business processes, ERP can be a solution for this. ERP can assist in recording, monitoring, reporting, evaluation, and analysis in real-time, which is more accessible [5]. A study discussing the use of ERP systems in the construction industry produces factors that make the ERP system successful in implementing a development process model [18].

ERP has a software system containing a wide range of software supporting business operations and decision-making processes. The use of ERP in companies is expected to improve the quality of information systems in companies. The use of ERP in companies can increase productivity and quality of work. These results come because ERP simplifies the company's complex operational processes. Another outcome companies achieve from ERP implementation is that they can reduce their operational costs and quickly access information in decision-making and managerial control [19]. The reason is that ERP has evolved into an integration tool.

The purpose of ERP is to integrate all existing applications in the company into a data storage center that will later be easily accessed by all departments that need the data. It can be seen from Figure 1, with the keywords "ERP" and "High-Tech," the results of previous studies that discussed ERP Implementation were obtained. Research on the relationship between ERP Implementation and manufacturing has already been discussed. In addition, the relationship between ERP implementation and high-tech has also been conducted research. ERP implementation with high-tech

and manufacturing is quite related. Companies that use high-tech in their industry quite a lot implement ERP. And what usually implements ERP is the manufacturing industry. The reason is that the manufacturing industry is quite complicated, and ERP implementation can facilitate business processes in manufacturing.

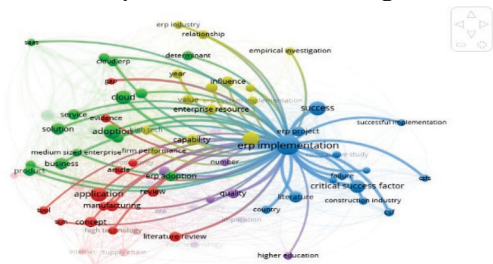


Figure 1 Bibliometric analysis of SDGs, High-Tech Industry, and ERP Implementation

Sustainable Development Goals (SDGs) are a system planned by national leaders that are implemented globally. With the SDGs, there is the potential to transform Indonesia from a developing country into one that can develop in all fields. 17 SDGs are expected to be achieved by 2030. SDGs are very important for the country, even more so for Indonesia. The existence of SDGs in Indonesia can make Indonesia a developed country and able to apply the economic concept of sustainability properly and thoroughly.

The SDGs have five main concepts to get three main points in sustainable development: earth, citizenship, harmony, prosperity, and partnership. Three main points must be achieved: poverty reduction, climate change mitigation, and equality. The main principle of SDGs is that no one should be left behind [13]. The three SDG principles must be applied to every SDG implementation process in Indonesia. The implementation of the SDGs principles is carried out thoroughly with the government and non-government stakeholders: SDGs principles, namely universality, integration, and no one left behind.

One of the goals of the 17 SDGs is infrastructure, industry, and innovation. The SDGs have four pillars, namely the social development pillar, the economic development pillar, the environmental development pillar, and the law and governance development pillar. The goals of industry, innovation, and infrastructure are included in the pillars of economic development. High-tech in the sector is required to reach this goal. High technology is widely used in the industrial industry. Manufacturing uses technology from low to high technology. The existence of high-tech in the industry enables companies to provide better innovations regularly. Good innovation can be realized by having good technology too. Innovation and satisfying results will build a sound economy for the country. The more companies that use high-tech in their companies, the better the country's infrastructure and economy will be.

The existence of high-tech in the industry needs to be used as well as possible. Industries that use high-tech in their business need to make it easier for the departments in the company. Implementing ERP in a company's business processes can make it easier for companies. The sophisticated methods used by companies need to be

appropriately stored and managed. ERP can manage all company data properly and can only be accessed by company departments. High-tech makes the company a little complicated to run it. ERP facilitates and makes all company activities more efficient.

Moreover, the manufacturing industry uses more high-tech, so ERP implementation is a good solution. From raw material purchasing data to finished goods and ready to use can be connected using ERP. Fast production in the manufacturing industry can increase exports. Manufacturing exports can be increased with the presence of high-tech.

One of the targets of the SDGs is increasing access to information and communication technology. The application of ERP in high-tech industries can achieve the targets of the SDGs. ERP allows the high-technology industry to increase access to information technology. As a manufacturing industry, which requires a lot of technology and systems, foreign ownership is needed to achieve high ROA [20]. The costs required to implement ERP in high-technology industries are neither cheap nor easy.

4.2 Achieving Sustainable Development Goals by Foreign Ownership in High-Tech Industry

In Figure 2, by using the keywords "Foreign Ownership," "High-Tech Industry," and "Sustainable Development Goals," which were searched using Publish or Perish and visualized using Vosviewer, it can be seen that the relationship between foreign ownership or foreign investment has been carried out a lot—research related to this. Foreign ownership of sustainable development goals is quite common. And research on foreign ownership with high-tech companies also has several studies. However, this research has not had as much discussion about sustainable development goals. Research that focuses on foreign direct investment was conducted in India and Europe. Research in that country is not too much, but some do. Related to foreign direct investment has much to do with sustainable development goals, plans, evidence, sustainability, and high-tech companies.

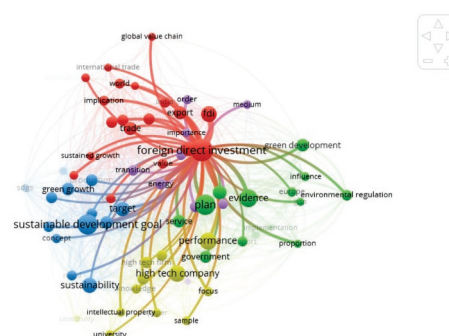


Figure 2 Bibliometric analysis of SDGs, High-Tech Industry, and Foreign Ownership

One of the 17 SDGs there is a goal, namely partnership for the goals. Foreign ownership is one of the partnerships that can make the company achieve company goals. Economic growth is significant for the

country. Infrastructure and innovation are essential drivers for economic growth and development. With the existence of a high-technology industry that develops quality infrastructure and innovation, it is hoped that it can support economic development and people's welfare. One of the goals of the partnership for the goals is to increase effective public-private and community partnerships under the Cooperation strategy. Foreign ownership owned by private companies allows companies to work with the government to achieve sustainable development goals.

Costs and high technology industry business processes are more expensive and complicated. Foreign ownership can make the company's performance better. According to a study, foreign ownership positively impacts the performance of companies in India. The more foreign ownership there is the higher the company's performance. Foreign ownership investing in companies has technologies, management systems, and expertise that can positively impact companies[20]. Companies that give foreigners a small percentage of their stock can help corporate management become more focused and efficient in carrying out company tasks. The presence of foreign ownership makes companies more sensitive to external social issues. Companies can get investors by disclosing social activities carried out [8]. With foreign ownership, companies can achieve one of the SDGs, industry, infrastructure, and innovation. The higher the foreign ownership in a company, the better the performance of the company. Foreign ownership can provide good management, innovation, technology, and marketing systems for companies. Foreign ownership is helping companies achieve two Sustainable Development Goals: industry, innovation, infrastructure, and Partnership for the Goals.

5 Conclusion and Research Gap

From the conducted research, it can be concluded that the implementation of ERP has the advantage of enabling complex simplifications in the company's operational process. ERP is expected to improve the quality and productivity of the company. ERP in a company's business processes in the high-tech industry will be more efficient. The existence of ERP allows companies to be able to increase accurate business forecasts and can minimize operational costs for the company. Foreign ownership of a company in the high technology industry must also be considered to create a conducive relationship among stakeholders. Foreign ownership makes good corporate governance and good reporting in the high-tech industry. Sustainable development goals are an agenda created to encourage changes that shift towards sustainable development following human rights and encourage the economy, national development, and the environment. Therefore, implementing ERP and foreign ownership in high-tech companies can facilitate achieving sustainable development goals that can prosper society. The bibliometric analysis using the Vosviewer shows that research on ERP implementation in high-tech industries

is still not widely carried out. Then for foreign ownership of the high-tech industry, quite a lot has been done. And previous studies discussing foreign ownership with sustainable development goals have been carried out a lot.

The literature review discusses the implementation of ERP in the high-tech industry and the process of achieving sustainable development goals. However, several gaps need to be considered for future research.

1. The literature has explained related studies. More specific discussion about the reasons for implementing ERP in the high-tech industry is still not widely discussed.
2. Research on how important the high-tech industry must achieve sustainable development goals.
3. Research on foreign ownership of high-tech industries is still not as extensive as foreign ownership research in achieving sustainable development goals. It is hoped that research related to this matter can be done more and better.
4. Further research is needed to measure the impact of ERP and foreign ownership in common on the performance of the high-tech industry.

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